REMARKS ON

CATARACT EXTRACTION.

BY

SWAN M. BURNETT, M.D.,

PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY IN THE UNIVERSITY OF GEORGETOWN; OPHTHALMIC AND AURAL SURGEON TO THE GARFIELD HOSPITAL; DIRECTOR OF THE OPHTHALMIC AND AURAL CLINIC AT THE CENTRAL DISPENSARY AND EMERGENCY HOSPITAL, WASHINGTON, D. C.

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Since the opening of the Garfield Memorial Hospital about two years ago, I have made twenty-five extractions of senile cataract. The number is not large, but the cases have been of such a character as will very properly serve as a basis for a few remarks on some of the mooted questions concerning this most important surgical operation.

The extraction in every case was effected through an upward incision in the cornea, made in accordance with the plan of De Wecker; that is, the upper third of the cornea was detached from the sclerotic, the incision lying wholly in the transparent tissue. Sometimes a flap of less magnitude was formed by the apex of the incision lying farther from the scleral border than the base, but this was only exceptional, and experience shows that it has no essential advantages over the incision as perfected by De Wecker and now very largely adopted by operators who have not originated some special plan of their own. In no case was the incision placed so peripherally as in the method introduced by Von Gräfe.

This incision of De Wecker seems to steer us as safely through the straits between the Scylla of corneal suppuration, and the Charybdis of iritis and cyclitis as could be reasonably hoped for. It gives an opening sufficiently large for the easy delivery of even the largest nucleus, and the lips of the wound adapt themselves as perfectly and with as little danger of gaping as in the so-called linear incision of Gräfe. This incision offers yet additional advantages over the Gräfe linear, in that it enables us to make the extraction without an iridectomy. It seems therefore, that as far as the form and position of the incision are con-

cerned, it is hardly possible for us to go farther towards perfection.

In ten of the cases the *extraction was made without an iridectomy.* This method, practiced largely, indeed almost without exception by the French, is struggling for a foothold in this country, with however, I believe but only a moderate chance for immediate adoption. Certainly an eye with a central movable pupil is on all accounts to be preferred to one with a large coloboma in the iris, but it is equally certain that even in the hands of the most skillful this is not to be attained in all cases in operating without an iridectomy. In a rather large minority there will be prolapse of the iris. It is an operation demanding rather more skill in its performance and requiring more quiet and repose on the part of the patient for the first forty-eight hours after the operation than with an iridectomy. And yet it is an operation that I think should be cultivated, because I believe we shall in time be able to master most of its disadvantages. I attempt it in every case in which there is no marked increase in the tension of the eye-ball, and when the anterior chamber is reasonably deep. Under these conditions, with a moderately docile patient, I do not greatly fear a prolapsus of the iris. And, moreover, should the iris refuse to return after the delivery of the lens, with a moderate amount of coaxing, it is as easy to make excision of the iris after as before the exit of the lens, thus converting it into an ordinary extraction with an iridectomy. I do not find that delivery of the lens is any more difficult than with iridectomy, and I believe the danger of prolapse of the vitreous is less, since there is not so great a liability to rupture of the zonula.

The possibility, however, of prolapse of the iris after it has been once returned cannot always be guarded against, even by the use of eserine. Here eveything depends upon the accurate coaptation of the wound, and an early and persistent adhesion of

its lips. A perfectly proper incision is therefore one of the first requisites for success in this method. This comes of skill and experience; but the second requisite—perfect rest of the eye for forty-eight hours—can never be counted on; for even the quietest patient, during sleep may make a sudden movement of the eye which will open the wound, when the aqueous humor will gush out, carrying with it the iris which remains thereafter fixed in the wound.

In *two cases* extraction was made *with the lens in its capsule.* In these cases an iridectomy was first made, since extraction in the capsule is much easier thus than with the iris entire. In both cases the result was perfect, and there was no escape of vitreous following the exit of the lens. In one instance it was done on account of a thickened and tough capsule; the other case was one of "black" cataract and it was desirable, for the purposes of investigation, to remove the lens in the capsule.[1]

In one instance only was a *preliminary iridectomy* made. This method, which has been brought again to the notice of the profession of late years, principally through Förster, of Breslau, has something to recommend it in a certain class of cases of which ours is typical. It was in an old man of near 80 years, the cataract was maturing slowly, the anterior chamber was very shallow, the pupil responded but feebly to light and mydriatics, and there was a chronic conjunctivitis due to an epiphora caused by a falling away of the puncta from the globe as a consequence of general laxity of the lid tissues. Such a case is not adapted for extraction without an iridectomy. I therefore made an iridectomy and rubbed the cornea against the capsule with the round corner of a strabismus hook according to Förster's recommendation. The result was a rapid maturing of the cataract

[1]A detailed history of this case and a consideration of the subject of black cataracts and their diagnosis is to be found in a clinical lecture published in the Medical News, Jan. 29, 1887.

which was successfully extracted three weeks later without any unusal complications. The making of such a preliminary iridectomy very much diminishes the danger of an operation in suspicious cases, since it divides the risk between the two operations, though it has happened to me to lose an eye from such a preliminary operation some years ago.

The ideal operation for cataract is without an iridectomy, and with the lens in its capsule—and some operators have confined themselves quite closely to such methods. Prof. Roosa, of New York, is at present, I believe, practicing an operation of that kind, and his statistics certainly recommend it to the further trial, but the conservative spirit of ophthalmic surgeons is very adverse to making any such radical departures from methods which give only about 6 per cent. or 7 per cent. of losses in ordinarily skillful hands. And yet I think it can be safely predicted that in the probably near future more tentative efforts will be made in that direction. In a progressive art like ophthalmic surgery no stop will be made short of as nearly absolute perfection as positive science and the greatest operative skill will allow us to attain.

In twenty-one of the cases *cocaine* applied locally *was the anæsthetic used.* The strength of the solution was 4 per cent., and no evil effects that could be referred to its employment were noted. A concurrence of testimony, however, seems to point to a possible danger from its too long employment in strong solutions. Cocaine undoubtedly has a tendency to cause a loosening of the epithelium of the cornea, thus furnishing a nidus for any pyogenic germs that may gain access. That it is, of itself, in any way deleterious I do not believe. After every instillation of the drops I cause the patient to close the eyelids, and in this manner it is believed the peculiar effect on the corneal epithelium is avoided.

In all the cases a certain amount of *antiseptic precaution* was used, but in the last eleven those of the

strictest nature were adhered to. The conjunctival sac was thoroughly washed out with a solution of mercury, 1 to 25,000, made according to the formula of Panas, of Paris; the instruments were laid in absolute alcohol; the lids, brow and neighboring parts of the face were washed with a carbolic acid solution, and the dressing applied next the eye after the operation was saturated with the mercuric solution.

In the cases in which an iridectomy was not made, it was attempted to *return the prolapsed iris* by rubbing the upper lid gently over the incision, but where that was not sufficient a small Bowman's probe, dipped in the antiseptic solution was used to reposit the membrane. A solution of *eserine* was then instilled into the conjunctival sac, and in the latest cases even into the anterior chamber, thus bringing the drug in direct contact with the iris-tissue and ensuring the strongest possible contraction of the pupil. In some instances where there were remains of corticalis, the anterior chamber was even washed out with the biniodide solution. This going directly into the anterior chamber is an innovation of quite recent origin. Confidence in antisepsis has made us bold, and we now handle tissues fearlessly which before we touched only with trembling.

So far as my experience goes, this treatment of the iris and anterior chamber is not followed by any evil results, and it gives us two important factors necessary for a perfect healing—a well contracted pupil, and a clean aqueous chamber.

Within the last twelve months a great deal has been said about the "new" and "rational" *after treatment* of cataract operations—the method being claimed as "original" by several parties. The method consists in abolishing dark rooms and doing away with cumbersome bandages. For eight years I have not confined an operated case in a room in which it was too dark for the nurse to read the directions given by the surgeon. That relic of barbarism I discarded because

it seemed to me both irrational and pernicious; irrational, because in only exceptional cases is light in moderation hurtful, while on the contrary, in most instances, it is of a decided advantage in keeping up the normal relation between the internal eye and its natural stimulus; pernicious, because I believe light, whether felt by the eye or not, to be as important to the well-being of man as good air, and I am myself too keenly alive to the blessed, vivifying influence of light to exclude it from persons who from age or decrepitude need all the sustaining power they can get. To enter the rooms of some ophthalmic institutions is like going into a dungeon. All these cases were treated in the open wards of a general hospital with abundant supply of light.

In regard to the matter of bandages, I do not go to the length of some in discarding them altogether, nor do I think such a course advisable. I do not use the flannel roller generally employed, for it is exceedingly hot and uncomfortable in summer, is easily disarranged, and the ordinary nurse cannot replace it when it becomes so. It seems to me also that an adhesive plaster applied over the lids would be very stiff and uncomfortable and would not afford as much protection against the accidental rubbing of the eye by the hands during sleep as the more elastic absorbent cotton. The bandage I use is a band of elastic flannel 2½ by 6½ inches, with a tape secured to each of the four corners, sufficiently long to pass around the head and come again to the front to be tied on the forehead.

After the operation is completed and the eye is disinfected, a thin linen or cotton cloth, saturated with an antiseptic solution, is placed over the closed lid, the orbital cavity filled out to the brow with absorbent cotton and the bandage applied, and the tapes, passing above and below the ears, are brought around to the front and tied in the centre of the forehead. This bandage is easily removed and the lids

can be inspected and washed—which is often very grateful to the patient—without opening the eye. The lids are always thus inspected at the end of the first twenty-four hours, or earlier, if there are symptoms demanding it, but the eye is not opened if there is no marked swelling of the lids. It takes at least forty-eight hours for the union of the lips of the wound to be firm enough to bear any considerable movement of the ball without danger of reöpening. At the end of the second day the lower lid is pulled down, and if there is no marked chemosis of the conjunctiva the bandage is replaced. At the end of the third day the corneal wound is inspected, and atropine drops applied.

The *operation* was not *complicated* in a single case, if we except a slight prolapse of vitreous in two cases, and a falling of the iris before the knife in one, necessitating the making of an iridectomy where none had been intended.

The *healing* was smooth and uninterrupted in all but eight cases. In two there was reöpening of the corneal wound one week after the operation; in four severe iritis supervened; in one there was hæmorrhage into the vitreous, and in one there was suppuration of the cornea. In one of the cases the patient, a colored woman of 70 years, was seized with *mania* on the third day, and tore the bandage from her eyes and was with difficulty controlled for the next four days. Similar cases have been reported before, and it is a question as to whether it is due to the bandaging and confinement, or to the atropine which had been used. This patient had had atropine applied but once, and the mania continued though the drug was not applied again. So far as we could learn the woman had never before manifested any symptoms of this character. The corneal wound healed nicely, but a plastic iritis obstructed the pupil to such an extent as to

render a secondary operation necessary. With that, however, her vision will be good.

As to *results*. There was complete primary success in twenty-one cases; in two good vision can be obtained by a secondary operation, and two eyes were lost. One of the eyes was lost by hæmorrhage into the vitreous caused by vomiting six hours after the operation. The vomiting was caused by the anæsthetic (A. C. E. mixture), it being in the præ-cocaine days. I have lost two eyes from this same cause, the other being some four years ago, and embodied in my last statistics.[2] Had I had the invaluable cocaine then, I believe those eyes could have been saved.

Of the ten cases without an iridectomy, there were only four in which there was an adhesion of the iris to the corneal wound, and in one of these, the patient—a mentally debilitated man—tore the bandage from his eyes and walked about the ward within the first twenty-four hours. When discovered by the nurse, the corneal wound was gaping wide and filled with prolapsed iris. The prolapsed portion of the iris was cut off, but inflammation of the iris set in leaving closure of the pupil as the result. With a secondary operation, however, his vision will be fair.

The loss of the eye from suppuration is of interest, as the operation was done under the most approved antiseptic method, and because the operation on the other eye, done some eight months previously but without such strict precautions, was perfectly successful, there not having been even a single unpleasant symptom after the operation. The first operation was done with an iridectomy, the last without. The operation itself was as smooth as it is possible for an operation to be. The incision was accurately placed, the lens delivered without any difficulty, and

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[2] Comparative Frequency of Eye Diseases in the White and Colored Races in the United States. Archiv. of Oph., vol. xiii, No. 2, 1884.

the iris returned with only a slight rubbing of the upper lid; and when the eye was closed for bandaging the pupil was central and round, and the wound was coäpted. And yet, at the end of twenty-four hours the lips of the wound were thickened and yellow, and there was a small quantity of pus on the cloth dressing next the eye. The infiltration rapidly increased, and by the next day the whole of the upper half of the cornea was involved. The bandage was removed on the first appearance of signs of suppuration, and it was vigorously combated by atropine, frequent washings of the eye with the mercuric solution, and dusting the cornea with powdered iodoform. To this prompt treatment we believe is due the arrest of the suppurative process at the end of the fifth day, though not before the upper third of the cornea had been lost. The remaining portion of the cornea is so opaque as to render any operation for restoration of vision futile.

This case is somewhat discouraging to the enthusiast for antisepsis, and advocate for the microbic theory of suppuration. I, of course, will not deny positively the absence of pyogenic microbes, but I do affirm that I used all the precautions that the most ardent antiseptist recommends; and though the majority of facts, clinical and experimental, seems to support the microbe theory, the final word yet remains to be said in regard to the cause and origin of suppuration. It seems to me that the cause cannot be altogether external. The general condition of the patient must not be excluded in settling the question of etiology. It is, I think, an important fact in this connection that this patient, on the tenth day after the operation, was attacked with facial erysipelas on the side of the operated eye, and nine days later a milder attack occurred on the other side. I will also state, as bearing on the same point, that in the thirty-four extractions recorded in my last statistics (l. c.), there were two suppurations of the cor-

nea, both in women broken down in health and with little vitality, one having been bed-ridden for years, and the other dying in less than a week after the operation.